DOCUMENT RESUME

ED 387 013 HE 028 594

AUTHOR Dey, Eric L.; And Others
TITLE Does Being Student-Centered Lead to Lower Academic Standards? Faculty Orientations and Undergraduate Grading Practices. AIR 1995 Annual Forum Paper.
INSTITUTION Michigan Univ., Ann Arbor. Center for the Study of Higher and Postsecondary Education.
PUB DATE May 95
NOTE 33p.; Paper presented at the Annual Forum of the Association for Institutional Research (35th, Boston, MA, May 28-31, 1995).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Achievement; *Academic Standards; College Faculty; College Students; Grade Point Average; *Grading; Higher Education; *Institutional Research; Student Attitudes; *Student Evaluation; *Student Participation; Teacher Attitudes; *Teacher Student Relationship
IDENTIFIERS *AIR Forum; Cooperative Institutional Research Program

ABSTRACT

This study investigated an apparent dilemma suggested by previous research on faculty orientations toward students and academic standards. Some research suggests that encouraging faculty to be student-centered is an effective way to increase student learning and development, while other research indicates that being student-centered leads to lenient grading and lower academic standards. Information was obtained from 134 institutions based on a longitudinal data set from the Cooperative Institutional Research Program, providing a nationally representative cohort of college freshmen who completed questionnaires upon entry in 1985 and again 4 years later in 1989. Faculty data were obtained from a Higher Education Research Institute survey of teaching practices. Student-centered evaluation methods were considered to be student presentations, student evaluations of each others' work, and weekly essay assignments. Using a series of multiple regression analyses predicting undergraduate grades, it was found that student evaluation practices and the ways in which faculty viewed their orientations toward students were not significantly related to institutional average grades. Faculty views of student-centeredness were also unrelated to institutional grades. (Contains 40 references.) (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 387 013

Does being student-centered lead to lower academic standards? Faculty orientations and undergraduate grading practices

Eric L. Dey, Sylvia Hurtado, Gloria Thomas Walker, and Mark A. Byrd

Center for the Study of
Higher and Postsecondary Education

University of Michigan

A paper presented at the forum of the
Association for Institutional Research

Boston, Massachusetts

Address information:

Center for the Study of
Higher and Postsecondary Education
2117 School of Education Building
University of Michigan
Ann Arbor, MI 48109–1259

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

IHE 0282594

AIR
for Management Research, Policy Analysis, and Planning

This paper was presented at the Thirty-Fifth Annual Forum of the Association for Institutional Research held at the Boston Sheraton Hotel & Towers, Boston, Massacusetts, May 28-31, 1995. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Editor
AIR Forum Publications

Does being student-centered lead to lower academic standards? Faculty orientations and undergraduate grading practices

Eric L. Dey, Sylvia Hurtado, Gloria Thomas Walker, and Mark A. Byrd

University of Michigan

As a number of studies on college grades and grading practices appropriately indicate, regardless of how inaccurate and unreliable grades often are, they remain an integral and indispensable part of academia (Agnew, 1993; McKeachie, 1976; Ekstrom & Villegas, 1994; Weller, 1986). Despite the inevitable presence of grades in the lives of most college students and faculty, much controversy continues to flourish over grades, particularly as they relate to and reflect institutional standards (Ekstrom & Villegas, 1994). Some are of the belief that higher grades and higher overall institutional grade point averages lead to an erosion of academic standards (Aristides [psuedonym], 1976; Huntley, 1976; Margolick, 1994). This dilemma regarding the message colleges and universities convey to society (e.g., graduate and professional schools; prospective students and employers of graduates) when their faculty are all too often high graders, and not frequently enough low graders, is a phenomenon usually referred to as *grade inflation* (Aristides [psuedonym], 1976; Birnbaum, 1977; Geisinger, 1980; Kolevzon, 1981; Suslow, 1977; Weller, 1986).

The term *grade inflation* evolved as an analog to *economic inflation*, which is defined as the general rise in prices with an accompanying decline in the purchasing power of money. Grade inflation is, therefore, a rise in grades with an accompanying decline in the value of grades (Aristides [psuedonym], 1976). Numerous studies appeared in the mid-1970s documenting the presence of grade inflation in American higher education, as indicated by a steady increase in student grades during the period of 1960-1975 (see for example Juola, 1974, 1977, 1980; Suslow, 1977). This body of literature brought to the forefront an issue of serious concern for college and

university faculty and administrators, and as a result many institutions put forth diligent efforts to reverse the trend.

The probable explanations for institutional grade inflation are as varied and numerous as the institutions within American higher education. For instance, some attribute the dilemma to demographic shifts in higher education. In his historical review, Birnbaum (1977) contends that with the influx of large numbers of minority students into higher education, faculty and administrators began trying to compensate for long decades of neglect of these underrepresented students. Writing under a psudonym, Aristides (1976) opines that the influx of Black students influenced grade inflation through lenient grading professors who gave grades to Blacks which they did not traditionally give to others. Grade inflation has also been attributed to an increase in the number of female college students, especially considering that females generally tend to receive higher grades than males (Birnbaum, 1977). As noted by Birnbaum, many of these speculations regarding faculty behavior in response to the entrance of women and minorities are offered without supporting evidence (and Birnbaum's single institution analysis suggests that these views are not supported by data).

Certain institutional policies and procedures have also been cited as sources which advance the grade inflation dilemma. Among them are late course withdrawal dates, permitting students to drop courses (often without penalty) in which they are in danger of failing; expunging first-attempt grades for courses later repeated successfully, incomplete and failing grades not computed in the GPA, and 4) pass/fail grading. These options are viewed by many authors as tactics to disguise students' true performance, and in many cases, they allow students to artificially raise their grades (Winsor, 1977; Bromley, et al, 1978). These policies that are typically adopted on an institution-wide basis serve to increase the variation between institutions.

Suslow (1977), Kolevzon (1981) and Weller (1986) all submit the possibility that students could very well be better academically prepared (based on higher high school grades). On the other hand, others contend that students are directed into specific disciplinary areas of study based upon

their level of academic preparation; consequently, the disparity between high and low grades is not only demonstrated across institutional types, but almost unilaterally can be traced to specific disciplines (Travers & Gronlund, 1950; Kolevzon, 1981; Sabot & Wakeman-Linn, 1991).

Travers and Gronlund (1950) concluded that physical science faculty provide the most consistent and reliable grades based upon a common philosophy of grading. The grading practice which they are most inclined to use is the mathematical, theoretical model of grading on a normal distribution curve, where the C is still maintained as average. Accordingly, in a more recent study, de Nevers (1984), refers to the same consistency of grading practice and philosophy in the physical sciences, specifically for engineering students at the University of Utah. There, the engineering students achieved an average grade point, in the 1970s, of 2.8, while their peers in other schools achieved a much higher average of about 3.5. The study showed that the least academically talented students (based on high school grades and college entrance examination scores) were going to easy-grading colleges or departments of study. Meanwhile the most academically talented students were going to harder- grading colleges and getting low grades.

Furthermore, due in part to the extremely competitive environment in the 1990s' job market, and for positions in graduate and professional schools, others contend that students are doing whatever it takes to get the transcripts loaded with A's; this often means choosing the 'soft' areas of study known for easier grading rather than 'hard' areas of study (Kolevzon, 1981; Hadley & Vitale, 1985; Sabot & Wakeman-Linn, 1991). Disciplines or departments cited among the highest graders include: education, fine and applied arts (Summerville, et. al., 1990), English, philosophy, political science, and psychology (Sabot & Wakeman-Linn, 1991). The general agreement is that the social sciences can go either way, though economics, in most studies, falls on the side of issuing lower grades. Physical sciences and mathematics are considered among the departments distributing the lowest grades as well, though, in some cases biology has been found to be an exception to this rule (Sabot & Wakeman-Linn, 1991). These studies suggest that it is

important to take into account disciplinary differences in an analysis of undergraduate grade point of averages.

A number of institutions continue to battle the dilemma of grade inflation through such strategies as changing the grading system or scale, recording and publicizing inconsistent grading practices among departments, and replacing the GPA with new indices that measure student academic achievement. While addressing the one dilemma of grade inflation with such strategies, colleges and universities are concurrently in a vicious cycle of advancing the problem as well. In their undertakings to better serve a more diverse, yet growing number of less academically-prepared students among their ranks, institutions turn to a variety of practices that some authors also point to as sources of grade inflation. For instance, greater use of more subjective measures for evaluating students' academic performance (e.g., class participation/attendance, effort and enthusiasm towards course); a wider variety of grading practices (e.g., contract grading, peer & self-evaluation, extra credit options); and inconsistencies in evaluation philosophies held by faculty when assessing student performance are all viewed as practices which contribute to higher institutional grades (Kolevzon, 1981; Lunneborg, 1978; Weller, 1986).

The issue of varying methods of evaluating students based upon inconsistent philosophies has certainly received much attention in the pertinent literature. A few authors (Lunneborg, 1978; Weller, 1986) concur on three distinct categories of evaluation philosophies to which most faculty usually subscribe for evaluating students and awarding grades:

1. student-centered philosophy (to promote reward, feedback, motivation)

2. institution-centered (to provide a decision-making vehicle for students, graduate schools, prospective employers)

3. record-keeping (to assess teaching effectiveness, set standards of social accountability)

Geisinger and Rabinowitz (cited in Ekstrom & Villegas, 1994) used the same three categories in their study on faculty grading practices. Based on their analyses of faculty attitudes (with a sample drawn from three institutions: one university, one four-year college, and one two-year college), they concluded that faculty grading orientations vary across types of institutions (Ekstrom & Villegas, 1994). Although Lunneborg (1978) and Weller (1986) conclude that such disparities can also be found within institutions, they go on to suggest that student-centered faculty generally believe grade inflation is of little or no consequence, while other faculty tend to view grade inflation as a real and major concern.

Whether the analyses is within or between institutions, the point must be noted that the degree to which faculty are student-centered (i.e., faculty who subscribe to a philosophy that students are not passive learners, and who encourage classroom participation and are themselves involved with students outside the classroom; see Kuh, et al., 1991) has been marked as a source of grade inflation. While this may suggest that being student-centered might have a negative effect on academic standards, it should be remembered that the advantages of student-centered institutions are well-documented. For example, research has shown that students who interact frequently with faculty tend to be more involved generally, and thus gain greater benefits from their collegiate experience (Astin, 1984; Endo & Harpel, 1983; Pascarella, Duby, Terenzini & Iverson, 1983; Volkwein, King & Terenzini, 1986).

Milton, Pollio, and Eison (1986) concluded that students and faculty do not always agree on their attitudes towards grades and how certain grading and evaluation practices may or may not lead to greater academic development. For example, students preferred being graded on a curve where their professors preferred more discretionary grading practices. Students felt the need to increase their emphasis on grades where faculty felt students needed to emphasize grades less. When students and faculty were asked how grades influence student/faculty relationships, students felt grades put faculty in a position of power, thereby distancing their relationships with faculty as friends. Faculty noted that they use grades to show their fairness and high academic standards.

Students did not view a very strong difference in achievement between a grade of A and C. Faculty perceived the difference as not only quite real, but with many lasting effects (Milton, Pollio, & Eison, 1986). Therefore, there is reason to believe that regardless of the evaluation method, all faculty take grading and their methods of student evaluation quite seriously. One of the objectives of this study is to understand the impact of institution-wide use of specific evaluation methods used by faculty to determine if these have the effect of raising overall institutional undergraduate grade point averages.

Given some of the cited differences in the perspectives of students and faculty with regard to grades and grading practices, the purpose of this study is to explore an apparent dilemma: Encouraging faculty to be student-centered may lead to increases in student learning and development, while also fueling higher grades and concerns about declining standards. We set out to directly test this hypothesis as well as address the other factors purported to explain variation between institutions in undergraduate grades. Specifically, we sought to answer the following research questions:

- What type of evaluation methods are most closely related to a student-centered environment as perceived by faculty and students?
- Are faculty perceptions of a student-centered environment significantly associated with higher overall performance at an institution?
- Are student perceptions of a student-centered environment significantly associated with higher overall performance at an institution?
- Which is more important in determining institutional grades, student perceptions of student-centeredness, or those held by faculty?

Method

In order to examine these research questions, we used a series of Cooperative Institutional Research Program (CIRP) data sets. Specifically, we used a longitudinal data set that was collected between 1985 and 1989 (see Astin, 1993; Higher Education Research Institute, 1991). These data were collected using CIRP questionnaires administered to a nationally representative cohort of

college freshmen upon entry in 1985, and again four years later in the spring 1989. The follow-up survey was administered to a random subsample of students who completed the freshmen survey, and is the principle source for many of the variables used in this study. Although the response rate for the follow-up was approximately 31%, weights were calculated to correct for non-response bias on the follow-up survey using the detailed information obtained from the freshman survey on all of the students who were mailed a follow-up survey. For a detailed discussion of sampling, response rates, data collection procedures, measures and weights, please see Higher Education Research Institute (1991).

In addition to student surveys, the Higher Education Research Institute (HERI) conducted a survey of faculty at many of the student-data institutions in 1989-90. Of those surveyed, approximately 55 percent responded (see Astin, Korn, & Dey, 1991). These faculty data provide us with information on faculty teaching practices at individual institutions. Additional institutional characteristics data for our sample were provided by the U.S. Department of Education. Data on enrollments, degrees awarded by specific fields were obtained from the Integrated Postsecondary Education Data Sharing (IPEDS) information system.

Since the questions raised of most studies on grade inflation relate to how overall institutional practices/methods of evaluating student performance affect overall institutional grade point averages we chose to study this issue using the institution as the unit of analysis. Data were aggregated at the institutional level by taking the mean responses to the questions provided by students and faculty, and were subsequently merged together to create a data set with over 800 institutional aggregate variables describing institutional structure, control, enrollments, degrees awarded; student's general demographics, attitudes, values, goals and performances; and faculty's general demographics, teaching practices and faculty opinions and goals. All told, the final sample for our analyses is made up of detailed student and faculty information from 134 colleges and universities (two-year colleges were excluded from our sample).

Variables

The dependent variable in these analyses is the institutional undergraduate college grade point average (please see Table 1 for coding details on this and other variables included in the analysis). Students were asked to report their undergraduate grades on a six-point scale, and these responses were aggregated to the level of the institution.

Insert Table 1 about here

On the basis of the previous research in this area, we assume that a variety of factors will influence the aggregate grades associated with any particular institution. Some of these factors are based on studies of individual performance in higher education (e.g., Astin, 1993) whereas others are derived from the literature on grade inflation (which is typically considered in the aggregate).

Control measures

The most important of the control variables used in this analysis is the average high school grades reported by students entering each college in the sample. Numerous studies have shown that high school grade level is a strong positive predictor of college grades (Astin, 1993; Pascarella & Terenzini, 1991). A related variable, institutional selectivity, is included in these analyses as an additional control for selective student recruitment which might, in turn, lead to differences in college grades across institutions. As defined here, institutional selectivity is measured by the average Scholastic Achievement Test (math plus verbal subscores, and based on converted ACT scores where SAT was unavailable).

Several positive predictors of college grade point average have been discussed in the literature. Although it runs counter to the notions that increased minority enrollments lead to easier grading (Aristides [psuedonym], 1976), Astin's (1993) analyses show that students who are white

are likely to have higher grade point averages. Thus, institutional percent white is measured as the average percent of students who are white at a given institution. Astin (1993) also found the women earn higher grades than do men. For this reason, institutional gender is measured as the average percent of students, within a given institution, who are women.

In addition to control variables which are derived primarily from the characteristics of the students a college enrolls, we also included several control variables related to institutional type. The first of these is institutional size. The term "redundancy" has been used in a number of studies (Barker & Gump 1964; Chickering 1969; Pascarella 1980) to describe a "condition which exists when the number of persons for a given setting exceeds the opportunities for active interpersonal participation" (Pascarella, 1980, p. 563). In theory, redundancy, as used in the context of institutional size, brings about an increasing "formalization of relationships between institutional constituencies with different status roles" (Pascarella, 1980 p. 563), and thus, rules and standards for conduct become more formalized and rigid (Chickering, 1969). In fact, institutional size has been shown to have a negative effect on a number of student outcomes. Astin (1993) found that institutional size has a negative effect on student's GPA, satisfaction with faculty, and on students perception of a student-oriented faculty. For these reasons, institutional size is used as a control variable.

Astin (1993) explained that both public and private universities are similar in a number of common environmental attributes that help explain most of their effects on students. And while public universities have a variety of indirect effects on student outcomes, attending a public university has a direct negative effect on student grades. Public four-year colleges are generally smaller than flagship public universities, and undergraduate education is their primary mission. Although their effects are smaller, these institutions also have a direct negative effect on college grade point average. Catholic institutions, however, have a weak positive effect on college grades (Astin 1993). Because of these variations between institutions, in institutional undergraduate grade point averages, the institutions included in our analyses are: public universities, private

universities, public four-year colleges, Catholic colleges, and nonsectarian four-year colleges, with Protestant colleges as the referent category.

As was mentioned earlier, departments vary in terms of grading practices. It was argued that higher grades were given in the liberal arts while lower grades were given in the sciences. Because of such variation, and in order to test this claim, we have included in our independent measures science degrees. It is measured as the percent of science degrees awarded at an institution in 1986, and includes degrees awarded in biological sciences, engineering, math and statistics, physical sciences, and 'other technical fields,' as reported by the institutions to the U.S. Department of Education.

Student-centeredness and evaluation methods

In addition to the control variables listed above, the other independent variables that are of primary interest in the analyses include measures of the degree to which institutions are student-centered as well as the predominant modes of evaluation used on each campus. These variables are described below, and detailed information on the construction of these variables is included in the Appendix as Table A1.

Since we suspected that students and faculty may have different views of the degree to which faculty are student-centered (see Dey, 1991), we developed parallel measures of student-centeredness. Student-centeredness (faculty view) is a factor derived from the average response to 6 questions asked of faculty on the HERI 1989-90 Faculty survey. The responses to individual questions were averaged by institution, and then factor analysis was performed to check the validity of the construct. The inter-item reliability was measured using Cronbach's α and is high for this scale. Student-centeredness (student view) is a factor derived from the average response to 6 questions asked of students on the HERI 1989 Follow-up survey. The responses to individual questions were averaged by institution, and then factor analysis and inter-item reliability, as

measured using Cronbach's α, were performed to check the validity and reliability of the construct. As shown in the appendix (Table A2) these two scales are highly correlated ($r = .81$).

Evaluation methods used in each institution are represented by two summative scales plus a single item of substantive interest. The student-centered evaluation methods scale is a factor derived from the average response to 3 questions asked of faculty on the HERI 1989-90 Faculty survey. The responses to individual questions were averaged by institution, and then factor analysis and inter-item reliability were used to check the validity and reliability of the construct. The methods used to evaluate student performance in this factor include: 'Student presentations,' 'Student evaluations of each others' work,' 'Weekly essay assignments.' In contrast, institution-centered evaluation methods scale is a factor derived from the average response to 6 questions asked of faculty on the HERI 1989-90 Faculty survey. The methods used to evaluate student performance in this factor include: 'Multiple-choice mid-term and/or final exams' plus 'Multiple-choice quizzes;' 'Essay mid-term and/or final exams;' 'Term / research papers;' 'Short-answer mid-term and/or final exams;' and 'Short-answer quizzes.' Since grading on a curve is featured prominently in a number of the articles on grade inflation, we include it here as a single item derived from the HERI 1989-90 Faculty survey.

Analysis

In order to examine the research questions posed above, we conducted a series of multiple regression analyses predicting undergraduate grades. For each set of analyses we computed three models which built upon one another. The control variables derived from student characteristics were entered into the prediction equation as Model 1, while the institutional type variables were added in Model 2. After these control variables were considered, we added a third-block of variables (Model 3) which represent the primary variables of interest: student-centeredness and evaluation methods. Given the high colinearity between student- and faculty-views of student-centeredness we ran three sets of analyses so that faculty-view of student-centeredness was

considered separately (Table 3), student-view was considered separately (Table 4), and with these two variables considered simultaneously (Table 5).

Even though these data are derived from a national program of research, the need to analyze the data using the institution as the unit of analysis means that we have a very limited sample size to work with (institution n = 134). Since this information was derived literally from tens of thousands of student and faculty respondents we are confident that these data are of high quality, despite the limited analytical sample. Given the limited number of cases in our analysis we have chosen an α probability level of .10 as our criterion for judging statistical significance. Although we are comfortable with this criterion, we recognize that others may prefer a more conservative approach and have thus indicate on the tables which follow our standard along with those more traditionally employed.

Results

Before reviewing the results of the multivariate analyses, it is important to consider the degree to which the primary variables of interest relate to one another. Table 2 shows the correlations between evaluation methods used on an institution-wide basis and perceptions of a student-centered educational environment, as perceived by both faculty and students at the institutions in our sample. This information is also useful in answering our first research question (What type of evaluation methods are most closely related to a student-centered environment as perceived by faculty and students?). There are some notable patterns that suggest particular classroom activities are strongly associated with perceptions of the overall campus environment. Specifically, faculty and student perceptions of a student-centered environment are associated with faculty assessment of student presentations and student evaluations of each others work. Weekly essay assignments are also associated with faculty, but not student, perceptions of a student-centered environment. Each of these graded activities in the classroom appear to actively engage students with the content of the course and with each other. Short-answer quizzes/exams are

another graded activity that is positively associated with faculty and student perceptions of a student-centered environment. This finding was not initially anticipated because this item loaded on the institution-centered factor as an evaluation method, however, it is a graded activity that is positively associated with faculty and student perceptions of a student-centered environment. It may be that such an evaluation method is used frequently throughout the term, as are weekly essay assignments, to keep students engaged in coursework as well as to provide regular feedback on performance.

Insert Table 2 about here

In contrast, grading on a curve is the strongest negative correlate ($p < .01$) of faculty perceptions of a student-centered environment (while student perceptions are also negatively correlated). Given that grading on a curve requires that some students be judged to do decidedly worse than others and only a few students will be judged to do substantially better, it is a practice that is intent on ranking students and is less attentive to student development. Thus, the perception of a student-centered institution is less likely to be associated with institution-wide use of this grading practice. Essay mid-term/final exams are also significantly ($p < .01$) less likely to be used on campuses perceived to be student-centered by faculty and students. In addition, term papers or research papers are significantly ($p < .05$) less likely to be used on student-centered campuses as the basis for grades. It may be that mid-term, finals, and final term papers are summative student evaluation techniques that are often less useful in terms of providing regular feedback to students. They also may be less likely to enhance student engagement, compared to other graded classroom activities, over the course of the term.

Table 3 shows the results of the first regression model of the dependent variable, institutional undergraduate grade point average, on all the independent measures of institutional characteristics in our model. Results show that entering students' high school grade point averages

BEST COPY AVAILABLE

are the strongest predictors of college grade point average at an institutional level. It is interesting to note, however, that institutional selectivity (based on SAT and converted ACT scores of the freshman class) are not significantly associated with college grade point averages four years after college entry. Although this may be because high school grades are strongly correlated with institutional selectivity ($r = .61$, $p < .01$), it is interesting that the average test scores at an institution do not uniquely contribute to the level of college performance at the institutions in our sample. These findings were consistent across the three regression models we tested. This will be further discussed in the conclusion section of this paper.

Insert Table 3 about here

This first regression model was intended to test whether faculty perceptions of a student-centered environment are significantly associated with higher college grade point averages for a cohort of students. We also find that faculty perceptions of a student-centered environment are not significantly associated with higher college grade point averages. This suggests that faculty at student-centered institutions are not significantly more likely to award higher grades as a matter of general practice.

In this first regression model, we find that the percentage of women at an institution is significantly associated with higher grade point averages. In subsequent regressions reported in Tables 4 and 5, however, gender does not uniquely contribute to this educational outcome in the final step of the regression. This is primarily because institutions with a higher proportion of women are strongly correlated with other institutional characteristics. These institutions are less likely to grade on a curve, tend to award a smaller proportion of science degrees, and are likely to be Catholic four-year institutions. In addition, once the students' perceptions of a student-centered environment are entered into the regression equation, the effect of gender on college grade point average is no longer significant (see Tables 4 and 5). This suggests that there is a significant

association between institutions that have a high proportion of women and student perceptions of a student- centered environment, after controlling for several institutional characteristics.

Insert Table 4 about here

Table 4 represents a regression model that tests the hypothesis that student perceptions of a student-centered environment are significantly associated with higher college grade point averages. Results show a strong significant effect ($p < .01$) of perceptions of a student-centered environment. We cannot determine from this analysis, however, whether students perform better because they perceive a student-centered environment or whether students who perform well report more positively about their undergraduate experience. Nevertheless, the findings indicate that on those campuses where the majority of students perceive a student-centered environment, students tend to perform significantly better academically.

It is important to note that controlling for students' perception of a student-centered environment unleashed some suppressor effects that revealed small but significant differences between institutions. Specifically, public four-year institutions, private universities, and Catholic four-year institutions were somewhat more likely than Protestant four-year institutions to have undergraduates with higher grade point averages.

Table 5 shows our final regression model which tests whether the student or faculty perception of a student-centered environment is most important in determining institutional grade point average. We find that the student perception remains a strong significant predictor of institutional undergraduate grade point average. It is important to note, however, that student and faculty perceptions are highly correlated ($r = .81$), which causes a distortion in the regression results when they are considered simultaneously and results in a negative association between faculty perceptions of a student-centered environment and institutional grade point average. Examining the partial regression coefficients after the previous block (Model 2) reveals that both

BEST COPY AVAILABLE

variables are positive predictors of undergraduate grades, although the faculty view is not significantly so. This finding is similar to the results presented in Tables 3 and 4.

Specific types of graded classroom activities that we considered to be student-centered, or evaluation methods of student performance that we considered institution-centered, are not significantly related to institutional grade point average. While these may be different effects at the individual level, different grading practices do not appear to directly affect actual student grades at the institutional level (although the possibility of indirect effects remains untested here). Other variables that do not have significant effects on this student outcome at the institutional level include the diversity of a campus (measured by the percentage of white students), institutional size, and the proportion of science degrees awarded. These findings were consistent across the three regression models.

Insert Table 5 about here

Discussion and Implications

One of our goals in undertaking this research was to shed light on what appeared to be a policy dilemma. Specifically, research suggests that encouraging faculty to be student-centered is an effective way of increasing student learning and development, while others have argued that being student-centered leads to lenient grading and lower academic standards. Our analyses suggest that this dilemma is illusory, in that evaluation practices and the ways in which faculty view their orientations toward students are not significantly related to institutional average grades. Although this runs counter to the conventional wisdom, we should point out that a good deal of the published literature seems to be based entirely on anecdotal evidence (e.g., Aristides [psuedonym], 1976) or research which provides, at best, indirect evidence (e.g., Ekstrom & Villegas, 1994).

These results do, however, suggest that the way in which students view the degree to which the campus environment is a supportive one is an important predictor of institutional grades,

although the processes by which these come about are somewhat ambiguous given the nature of our data. It may be that students will work harder and therefore earn higher grades when they see faculty as being student-centered, or they may see faculty as student-centered when they are awarded higher grades. On balance, our results indirectly suggest that the first interpretation is the correct one since faculty views of student-centeredness are unrelated to institutional grades -- if faculty gave higher grades as part of an effort to be student-centered we would most likely see a positive relationship between these two variables. Moreover, this interpretation is consistent with the growing body of literature which suggests student achievement and development is increased when students perceive that they are viewed as, and become, important and involved members of the campus community (Astin, 1993; Kuh, et al., 1991).

Viewed from the perspective of the grade inflation literature, these results are intriguing in that virtually none of the results support ideas that appear consistently throughout this literature (but which are ideas that are typically offerred without supporting research evidence). The composition of institutions in terms of student race and gender is unrelated to institutional grades, as is the degree to which the institution emphasizes those fields which have been described as having very high grading standards (i.e., math, science, and engineering). While there may well be consistent patterns along these lines within institutions, these patterns are not reproduced on the level of the institution as is commonly argued.

Other than the degree to which students view faculty as being student-centered, the one variable in our analysis which is a consistent predictor of undergraduate grades is the average high school grades earned by students. While this relationship is hardly surprising, it is interesting to note that the high school grade variable is a much better predictor of college grades than is institutional selectivity (which is based on the SAT). Taken together, this suggests that colleges may wish to consider decreasing their reliance on standardized admissions tests. Despite a parallel set of concerns about declining standards in high schools (Dey & Hurtado, 1994), high school grades appear to be very effective at predicting college grades.

In thinking about the implications of these results for individual institutions, it is important to recognize several limitations. First, these analyses are conducted at the institutional level of analysis and we must therefore be cautious of ecological fallacies. For example, these results suggest that if faculty become more student-centered *in the aggregate* there is no corresponding increase in grades *in the aggregate*. This is not to say, however, such patterns will hold consistently within institutions. Within institution differences have been ignored in the present analysis as we've been concerned with institutional-level outcomes, yet this is not to say that they do not exist or are unimportant. Institutional researchers are in an ideal position to examine such questions across a variety of within institution contexts to move such discussions beyond the level of simply description and speculation on campus.

It should also be recognized that it is quite likely that efforts to encourage faculty to be student-centered will not be equally successful across all departments. Thus, while these results suggest that aggregate grades will not be affected by such efforts, within institution differences may actually increase. These sorts of limitations suggest that an interesting area of future research would be to consider these questions through multi-level analyses (Bryk & Raudenbush, 1992) so that these sorts of differences -- which naturally occur within and between institutions -- can be statistically modelled in an appropriate fashion.

Finally, it should be noted that issues of grade inflation are most naturally studied in a longitudinal fashion using sequential cohorts of data on students. Although these data raise interesting questions about some common assumptions about the process of grade inflation, these are raised indirectly. Institutional researchers with access to information on enrollment and grading trends over time can examine these questions directly (see for example Birnbaum, 1977) using procedures such as time-series analysis (see Rogers, 1983, for an exploratory application). By bringing appropriate data resources to bear on this and related questions, institutional researchers can help unravel complex issues of concern to the higher education community.

References

Agnew, E. (March/April 1993). Departmental grade quotas: The silent saboteur. San Diego, CA: Paper presented at the Annual Meeting of the Conference on College Composition and Communication. (ERIC Document Reproduction Service No. ED 358 487)

Aristides [psuedonym]. (1976). The other inflation. American Scholar, 45(4), 492-97.

Astin, A. (1993). What Matters in College? Four Critical Years Revisited. San Francisco: Jossey-Bass Publishers.

Astin, A.W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 25, 297-308.

Astin, A.W., Korn, W.S., Dey, E.L. (1991). The American college teacher: National Norms for the 1989-90 HERI faculty survey. Los Angeles: Higher Education Research Institute, UCLA.

Barker, R. and Gump P. (1969). Big school, small school. Stanford, CA:Standford University Press.

Birnbaum, R. (1977). Factors related to university grade inflation. Journal of Higher Education, 48, 519-539.

Bromley, D.G., Crow, M.L. & Gibson, M.S. (1978). Grade inflation: Trends, causes, and implications. Phi Delta Kappan, 59(10), 694-7.

Bryk, A.S., & Raudenbush, S.W. (1992). Hierarchical linear models: Applications and data analysis methods. Newbury Park, CA: Sage.

Chickering, A. (1969). Education and identity. San Francisco: Jossey-Bass.

Cohen, H. (1984). Inflated grades, deflated course: Has insecurity induced compromise? Change, 16(4), 8-10.

de Nevers, N. (1984). An engineering solution to grade inflation. Engineering Education, 74(7), 661-63.

Dey, E.L., & Hurtado, S. (1994). College students in changing contexts. Chapter in Higher education in American society, edited by P.G. Altbach, R.O. Berdahl, & P.J. Gumport. Albany, NY: Prometheus Press.

Dey, E. L. (1991). Perceptions of the college environment: An analysis of organizational, interpersonal, and behavioral influences. Unpublished doctoral dissertation, UCLA.

Ekstrom, R.B & Villegas, A.M. (1994). College grades: An exploratory study of policies and practices. College Board Report No. 94-1. New York: College Entrance Examination Board.

Endo, J., & Harpel, R. (1983). Student-faculty interaction and its effect on freshman year outcomes at a major state university. Paper presented at the meeting of the Association for Institutional Research, Toronto.

Geisinger, K.F. (1980). Who is giving all those A's? Journal of Teacher Education, 31(2), 11-15.

Goldman, L. (Nov, 1982). The betrayal of the gatekeepers: Grade inflation. San Antonio, TX: Paper presented at the Annual Meeting of the Southwest Philosophy of Education Society. (ERIC Document Reproduction Service No. ED 232 511)

Hadley, M. & Vitale, P. (1985). Evaluating student achievement. (ERIC Document Reproduction Service No. ED 285 878)

Higher Education Research Institute. (1991). The American college student, 1989: National Norms for 1985 and 1987 college freshmen. Los Angeles: Higher Education Research Institute, UCLA.

Huntley, J.F. (1976). Academic evaluation and grading: An analysis and some proposals. Havard Educational Review, 46(4), 612-31.

Juola, A.E. (1974). Grade inflation: The facts, the reasons, the consequences, the future. Unpublished manuscript. Available from Michigan State University Learning and Evaluation Services, East Lansing, MI 48824.

Juola, A.E. (1977). Grade inflation in higher education: What can or should we do? (ERIC Document Reproduction Service No. ED 129 917)

Juola, A.E. (1980). Grade inflation in higher education - 1979: Is it over? (ERIC Document Reproduction Service No. ED189 129

Kolevzon, M.S. (1981). Grade inflation in higher education: A comparative study. Research in Higher Education, 15(3), 195-212.

Lunneborg, P.W. (1978). College grades: What do professors intend to communicate to whom? The American Association of University Professors Bulletin, 64(1), 33-35.

Margolick, D. (1994, June 4). Stanford University decides to make courses harder to drop but easier to fail. New York Times, p. 7.

McKeachie, W.J. (1976). College grades: A rationale and mild defense. The American Association of University Professors Bulletin, 62, 320-322.

Milton, O., Pollio, H.R., & Eison, J.A. (1986). Making sense of grades: Why the grading system does not work and what can be done about it. San Francisco: Jossey-Bass Publishers.

Pascarella, E.T. (1980). Student faculty informal contact and college outcomes. Review of Educational Research, 50, 545-595.

Pascarella, E.T., Duby, P., & Iverson, B. (1983). A test and reconceptualization of a theoretical model of college withdrawal in a commuter institution setting. Sociology of Education, 56, 88-100.

Pascarella, E.T. (1991). How college affects students. San Francisco: Jossey-Bass.

Rogers, B.G. (1983). A time series approach to the longitudinal study of undergraduate grades. University of Northern Iowa. (ERIC Document Reproduction Service No. ED 235 228)

Sabot, R. & Wakeman-Linn, J. (1991). Grade inflation and course choice. Journal of Economic Perspectives, 5(1), 159-70.

Summerville, R., Ridley, D.R., and Maris, T.L. (1990). Grade inflation: The case of urban colleges and universities. College Teaching, 38(1), 33-38.

Suslow, S. (1977). Grade inflation: End of a trend? Change, 9 (3), 44-45.

Travers, R.M.W. and Gronlund, N.E. (1950). The meaning of marks. Journal of Higher Education, 21(7), 369-374.

Volkwein, J.F., King, M., & Terenzini, P.T. (1986). Student-faculty relationships and intellectual growth among transfer students. Journal of Higher Education, 57, 413-430.

Weller, L.D. (1986). Attitude toward grade inflation: A random survey of American colleges of arts and sciences and colleges of education. College and University, 61(2), 118-27.

Winsor, J.L. (1977). A's, B's, but not C's? A comment. Contemporary Education, 48(2), 82-4.

Table 1
Descriptive statistics for selected institutional variables (n = 134)

Variable	Mean	Standard Deviation	Description
Undergraduate grades	4.248	.395	Institutional average of respondents' undergraduate grades in 1989. Coding: 1 = C- or less, to 6 = A.
Institutional Selectivity	1015.888	137.389	Institutional average of SAT scores (math + verbal).
Percent white	.886	.220	Percent of student respondents who were white.
Percent women	.671	.196	Percent of student respondents who were women.
High school grades	5.914	.805	Institutional average of respondents high school grades in 1985. Coding: 1 = D to 8 = A or A+.
Institutional size	4251.767	7446.667	Total full-time equivalent enrollment.
Institutional type[1]			Dummy-coded (1=yes, 0 = no)
Public university	.067	.251	
Private university	.067	.251	
Public four-year college	.127	.334	
Catholic four-year college	.142	.350	
Nonsectarian four-year college	.261	.441	
Science degrees	18.362	11.095	Average % of science degrees awarded in 1986 (from IPEDS).

Table 1 continued

Variable	Mean	Standard Deviation	Description
Sudent-centeredness (faculty view)	17.502	1.568	Factor derived from responses to 6 questions on the 1989-90 HERI Faculty survey. α = .9442. Coding: 6 - 23.
Sudent-centeredness (student view)	16.840	1.997	Factor derived from responses to 6 questions asked of students on the 1989 FUS. α = .932. Coding: 6 - 23.
Student-centered evaluation methods	5.411	.481	Factor derived from responses to 3 questions asked of faculty on the 1989-90 HERI Faculty survey. α = .7877. Coding: 3 - 12.
Institution-centered evaluation methods	12.750	1.189	Factor derived from responses to 6 questions asked of faculty on the 1989-90 HERI Faculty survey. α = .6814. Coding: 6 - 24.
Grading on a curve	1.744	.228	The degree to which faculty report using grading on a curve in their classes (from the 1989-90 HERI Faculty survey). Coding: 1 indicates curve is used in none of the courses taught by faculty respondents; 4 indicates curve is used in all courses taught by faculty respondents.

[1]Protestant four-year colleges serve as the referent category in the regression analyses.

Table 2
Correlation between faculty/student's view of student-centeredness and grading practices

	Perceptions of student-centeredness held by	
Evaluation method	Faculty	Students
Student-centered		
Student presentations	.377***	.313***
Weekly essay assignments	.174**	.109
Student evaluations of each others work	.285***	.147*
Institution-centered		
Multiple-choice quizzes/exams	-.113	-.151*
Short-answer quizzes/exams	.232***	.163*
Essay mid-term/final exams	-.298***	-.305***
Term / research papers	-.179**	-.199**
Grading on a curve	-.324***	-.229***

*** $p < .01$; ** $p < .05$; * $p < .10$

Note: See Appendix A a for detailed description of Student-centered, Institutional-centered evaluation methods.

Table 3
Regression models specifying the effects of faculty views of student-centeredness and grading practices on undergraduate grades

	Standardized regression coefficents (β)		
Independent variables	Model 1	Model 2	Model 3
Institutional selectivity	.0103	.0760	.1381
Percent white	-.0170	-.0437	-.0203
Percent women	.1940***	.1543**	.1406*
High school grades	.6138***	.6333***	.6136***
Institutional size		-.0962	-.0285
Public university		-.0112	.0100
Private university		.0765	.1293
Public four-year colleges		.1137	.1179
Catholic four-year colleges		.1177	.1100
Nonsectarian four-year colleges		-.0248	-.0091
Science degrees		-.0336	.0045
Student-centeredness (faculty view)			.0523
Student-centered evaluation methods			.1201
Institution-centered grading practice			.0346
Grading on a curve			-.0968
R^2	.3952***	.4305***	.4550***
Adjusted R^2	.3764***	.3792***	.3857***

*** $p < .01$; ** $p < .05$; * $p < .10$

Table 4
Regression models specifying the effects of institutional level student's view of student-centeredness and grading practices on average undergraduate grade point average

	Standardized regression coefficents (β)		
Independent variables	Model 1	Model 2	Model 3
Institutional selectivity	.0103	.0760	.1229
Percent white	-.0170	-.0437	-.0309
Percent women	.1940***	.1543**	.1060
High school grades	.6138***	.6333***	.5519***
Institutional size		-.0962	.0545
Public university		-.0112	.0962
Private university		.0765	.1626*
Public four-year colleges		.1137	.2160**
Catholic four-year colleges		.1177	.1382*
Nonsectarian four-year colleges		-.0248	.0265
Science degrees		-.0336	.0050
Student-centeredness (student view)			.3212***
Student-centered grading practice			.0831
Institution-centered grading practice			.0460
Grading on a curve			-.0788
R^2	.3952***	.4305***	.4962***
Adjusted R^2	.3764***	.3792***	.4322***

*** $p < .01$; ** $p < .05$; * $p < .10$

Table 5
Regression models specifying the effects of both institutional level faculty's and student's view of student-centeredness and grading practices on institutional undergraduate grade point average

	Standardized regression coefficents (β)		
Independent variables	Model 1	Model 2	Model 3
Institutional selectivity	.0103	.0760	.1109
Percent white	-.0170	-.0437	-.0043
Percent women	.1940***	.1543**	.0979
High school grades	.6138***	.6333***	.5791***
Institutional size		-.0962	-.0072
Public university		-.0112	.0607
Private university		.0765	.1172
Public four-year colleges		.1137	.1641*
Catholic four-year colleges		.1177	.1258
Nonsectarian four-year colleges		-.0248	.0155
Science degrees		-.0336	-.0145
Student-centeredness (faculty view)			-.2253
Student-centeredness (student view)			.4069***
Student-centered grading practice			.1161
Institution-centered grading practice			.0351
Grading on a curve			-.0892
R^2	.3952***	.4305***	.5047***
Adjusted R^2	.3764***	.3792***	.4370***

*** $p < .01$; ** $p < .05$; * $p < .10$

Table A1
Factor loadings and reliabilities of scales used in this study

Factors/items	Factor loading
Student-centeredness (faculty view) (α = .9442; 1989-90 HERI faculty survey items)	
Faculty here are strongly interested in the academic problems of undergraduates	.9588
Faculty are committed to the welfare of this institution	.9066
Most students are treated like numbers in a book (reversed)	.8951
It is easy for students to see faculty outside of regular office hours	.8896
Faculty here are interested in student's personal problems	.8583
There are many opportunities for faculty and students to socialize with one another	.7650
Student-centeredness (student view) (a = .9320; 1989 FUS survey items)	
Faculty here are interested in student's personal problems	.9093
Faculty here are strongly interested in the academic problems of undergraduate	.9063
Faculty are committed to the welfare of this institution	.8497
It is easy for students to see faculty outside of office hours	.8437
There are many opportunities for faculty and students to socialize with one another	.8194
Most students are treated like numbers in a book (reversed)	.7102
Student-centered evaluation methods (α = .7877; 1989-90 HERI faculty survey items)	
Student presentations	.9491
Student evaluations of each others work	.7399
Weekly essay assignments	.5530
Institution-centered evaluation methods (α = .6814; 1989-90 HERI faculty survey items)	
Multiple-choice mid-term and/or final exams + Multiple-choice quizzes	.7746
Essay mid-term and/or final exams	.7233
Term / research papers	.6866
Short-answer mid-term and/or final exams + Short-answer quizzes	.4912

Table A2
Zero-order correlations among the variables used in the study

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. College GPA																
2. Selectivity	.347•••															
3. Percent white	.201••	.397•••														
4. Percent women	.144•	-.146•	-.065													
5. High School GPA	.598•••	.605•••	.368•••	-.081												
6. Institutional size	-.023	.105	.015	-.018	.119											
7. Public university	-.062	.083	.035	-.060	.100	.836•••										
8. Private university	.118	.107	.036	.024	.120	.218••	-.072									
9. Public four-year	-.088	-.293•••	-.068	.139	-.293•••	.010	-.102	-.102								
10. Catholic four-year	.132	-.129	-.035	.202••	-.015	-.138	-.109	-.109	-.155•							
11. Nonsect. four-year	.082	.422•••	-.061	.004	.195••	-.194••	-.159•	-.159•	-.227•••	-.242•••						
12. Science degrees	.109	.301•••	-.014	-.159•	.242•••	.219••	.181••	.186••	-.081	-.174••	.172•					
13. Student-centeredness (faculty view)	.178••	.068	.161•	-.016	.164•	-.725•••	-.569•••	-.301•••	-.315•••	.147•	.199••	-.302•••				
14. Student-centeredness (student view)	.343•••	.139	.125	.062	.228•••	-.619•••	-.529•••	-.135	-.325•••	.120	.189••	-.174•	.810•••			
15. Student-centered evaluation	.044	-.237•••	-.068•••	.136	-.211••	-.271•••	-.197••	-.230•••	.135	.122	.069	-.289•••	.338•••	.235•••		
16. Institution-centered evaluation	-.283•••	-.751•••	-.216••	.022	-.457•••	-.108	-.055	-.155•	.261•••	.130	-.487•••	-.109	-.089	-.137	.012	
17. Grading on a curve	-.001	.452•••	.131	-.151•	.245•••	.319•••	.260•••	.257•••	-.147•	-.220••	.227•••	.344•••	-.324•••	-.229•••	-.415•••	-.324•••

••• P ≤ .01, •• P ≤ .05, • P ≤ .10

BEST COPY AVAILABLE